REMARKS

The claims remaining in the present application are Claims 1-22. The Examiner is thanked for performing a thorough search. Claims 1, 23, 32, 35 and 37 have been amended. No new matter has been added.

CLAIM REJECTIONS
35 U.S.C. §102

Claims 1, 2, 4, 6, 9, 11, 13-15, 18-23, 24, 26 and 28-31

Claims 1, 2, 4, 6, 9, 11, 13-15, 18-23, 24, 26 and 28-31 are rejected under 35 U.S.C. §102(a) as being anticipated by U.S. Patent No. 6,909,792 by Carrot et al. (referred to hereinafter as "Carrot"). Applicants respectfully submit that embodiments of the present invention are neither taught nor suggested by Carrot.

The highest level Claims 1, 23 and 32 have been amended. Support for the amendments to the highest level Claims 1, 23 and 32 can be found in the instant Application serial no. 10/698,111, among other places, at page 21 lines 23-31 which states,

> For example, classifier 130 may be provided with a training data set comprised of 1) plan-view templates 25 labeled as belonging to a "reaching" class and obtained for people reaching for items, and 2) plan-view templates 125 labeled as "non-reaching" and obtained for people standing up straight and not reaching. Classifier 130 is operable to adjust its parameters iteratively during a training process, so as to learn to discriminate correctly between plan-view templates 125 belonging to <u>different classes</u> such as the "reaching" and "non-reaching" classes in this example. (emphasis added)

The instant application also states on page 23 lines 25-30,

> With reference to Figure 5, for embodiments of the invention that construct plan-view images from more than one horizontal slice 510 of three-dimensional point cloud 330, data from more than one slice may be provided to one or more classifiers. In some of these embodiments, plan-view templates 125 extracted from different horizontal slices are provided to separate classifiers to make independent classification decisions."

Amended independent Claim 1 recites,

> A method for visual-based recognition of an object, said method comprising:
> receiving depth data for at least a pixel of an image of an object, said depth data comprising information relating to a distance from a visual sensor to a portion of said object shown at said pixel, said visual sensor comprising an emitter and sensor of light;
> generating a plan-view image based in part on said depth data;
> extracting a plan-view template from said plan-view image; and

processing said plan-view template at a classifier <u>to assign a class to said plan-view template</u>, wherein said classifier is trained to make a decision according to pre-configured parameters <u>determined at least in part based on said class of said plan-view template</u>. (emphasis added)

Carrot does not teach or suggest, "processing said plan-view template at a classifier <u>to assign a class to said plan-view template</u>, wherein said classifier is trained to make a decision according to pre-configured parameters <u>determined at least in part based on said class of said plan-view template</u>," as recited by Claim 1.

Carrot teaches comparing historical and later images to emphasize temporal differences between them. For example, Carrot states at Col. 1 lines 13-15, "The standard of care for managing breast disease includes (in order) detection, diagnostic work-up, definitive diagnosis, treatment, adjuvant therapy and follow-up....This implies repeated imaging of the region of tissue containing the lesion." Carrot goes on to state at Col. 1 lines 51-56, "A composite image is created which visually emphasizes the <u>temporal differences between historical and later images</u>. Preferably <u>three-dimensional</u>, digitized images, displayable in various projections, <u>are stored for archival purposes</u> on computer readable media" (emphasis added). Carrot uses an optical correlator as a part of determining temporal differences between historical and later images. For example at Col. 10 lines 37-40, Carrot states,

> In the preferred embodiment, the image processor 24 electronically writes the dual images to the optical correlator 30. The optical correlator 30 preferably performs the correlation operations and returns a resulting correlation image to the image processor 24.

Carrot teaches partitioning ultrasonographic images into slices that can be collapsed into thicker slices. For example at Col. 9 lines 15-26,

> In one embodiment the invention utilizes additional three-dimensional information about the subject body by further correlating the images in order to align the z direction (depth). To accomplish this, the ultrasonographic imagery is first partitioned by image processor 24 into conveniently defined slices, for example slice 164 as shown in FIG. 7. Each slice includes one or more layers of the three dimensional ultrasonographic image data. The slices are defined and calculated by image processor 24, for example by summing data points along vertical vectors such as 165, to collapse multiple thin layers into a thicker slice (a "partial cumulative projection").

The Office Action states in the first 4 lines of page 8, "extracting a plan-view template/entire slice (167) (see Fig. 7, Abstract, lines 11-15, historical images,

registered images from previous scanning of the breast tissue, the template may be the entire plan-view image itself)..." It is not clear to Applicant from this statement what in Carrot the Office Action is asserting teaches "a plan-view template" recited by Claim 1. The possibilities are a slice 167, historical images, and registered images. However, note that none of Carrot's slice 167, historical images or registered images are assigned a class. Nor would Carrot have any motivation to do so. For example, none of Carrot's slice 167, historical images or registered images result in classifications of approximate shapes of slices of lumps that may be found in women's breasts, nor would Carrot have any motivation to classify approximate shapes of slices of lumps. Second, the historical images and the registered images are not "plan-view" and therefore cannot be "plan-view templates." For example, Carrot states at Col. 1 lines 53-55, "Preferably three-dimensional, digitized images, displayable in various projections, are stored for archival purposes on computer readable media" (emphasis added)." Third, the difference between the embodiment recited by Claim 1 and Carrot is neither trivial nor obvious. For example, since Carrot does not teach or suggest "processing said plan-view template at a classifier to assign a class to said plan-view template, wherein said classifier is trained to make a decision according to pre-configured parameters determined at least in part based on said class of said plan-view template," Carrot cannot provide "Discrimination between arm positions...Discrimination between body positions...Discrimination between different types of objects, such as cars, trucks, motorcycles, and bicycles...Discrimination between men and women...Discrimination between the person behaviors of standing still and walking..." as discussed in the instant Application on page 22 lines 8 to page 23 line 4.

For the foregoing reasons, Carrot does not teach nor render obvious, among other things, "processing said plan-view template at a classifier to assign a class to said plan-view template, wherein said classifier is trained to make a decision according to pre-configured parameters determined at least in part by said class of said plan-view template," as recited by Claim 1. Therefore Claim 1 should be patentable. Independent Claim 23 should be patentable for similar reasons that Claim 1 should be patentable.

Claims 2-22 depend on independent Claim 1. Claims 24-31 depend on independent Claim 23. These dependent claims include all of the features of their

respective independent claims. Therefore, these dependent claims should be patentable for at least the reasons that their respective independent claims should be patentable.

<center>35 U.S.C. §103</center>

Claims 5, 7, 8, 32, 33, 35-37, 39 and 40

In paragraph 8, the Office Action rejected Claims 5, 7, 8, 32, 33, 35-37, 39 and 40 under 35 U.S.C. 103(a) as being unpatentable over Carrot in view of Official Notice. Applicant respectfully submits that embodiments of the present invention are neither taught nor suggested by Carrot or Official Notice, alone or in combination.

Applicant respectfully agrees that Carrot does not teach a three-dimensional point cloud as recited by independent Claim 32. Applicant respectfully disagrees that it would be obvious to one of ordinary skill in the art at the time the invention was made to have a three-dimensional point cloud. Further, Claim 32 recites "processing said plan-view image at a classifier, wherein said classifier is trained to make a decision according to pre-configured parameters and wherein said pre-configured parameters were determined based at least in part on a class assigned to a plan-view template that was extracted from said plan-view image." Therefore, Claim 32 should be patentable over Carrot for similar reasons that Claim 1 should be patentable over Carrot. The Official Notice does not remedy the deficiency in Carrot.

Claims 5, 7, and 8 depend on Claim 1. Claims 33, 35-37, 39 and 40 depend on independent Claim 32. These dependent claims include all of the features of their respective independent claims. Therefore, these dependent claims should be patentable for at least the reasons that their respective independent claims should be patentable.

CONCLUSION

In light of the above listed amendments and remarks, reconsideration of the rejected claims is requested. Based on the arguments and amendments presented above, it is respectfully submitted that Claims 1-40 overcome the rejections of record. For reasons discussed herein, Applicant respectfully requests that Claims 1-40 be considered be the Examiner. Therefore, allowance of Claims 1-40 is respectfully solicited.

Should the Examiner have a question regarding the instant amendment and response, the Applicant invites the Examiner to contact the Applicant's undersigned representative at the below listed telephone number.

Respectfully submitted,
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